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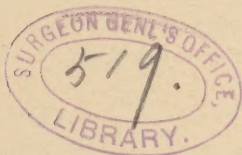
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ON THE IMPORTANCE OF THE EARLY RECOGNITION OF
CERTAIN DISEASES AND CONDITIONS OF
THE EYE

BY THE GENERAL PRACTITIONER,
WITH SUGGESTIONS REGARDING THEIR MANAGEMENT.*

BY H. D. W. CARVELLE, M. D. (HARV.),
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THE object of this paper is to offer a few suggestions to the general practitioner so that he may better determine what diseases, injuries, and conditions of the eye he should treat, and what cases to send to the ophthalmologist. Until within a few years instruction in errors of refraction and diseases of the eye were not considered necessary by the leading medical schools, and many students are now graduated without a knowledge of the use of the ophthalmoscope, and are unable to diagnosticate the ordinary external diseases of the eye. That a more thorough knowledge of the eye is not required is injurious to the patient, the physician, and the ophthalmologist. The patient often suffers by not being sent to the specialist in time because

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the physician does not recognize the gravity of the case, and thereby loses his confidence; and when he is sent to the ophthalmologist, or drifts into his hands, it is often too late for him to be of any service.

It has been my experience that nothing redounded more to the credit of the physician when he was called upon to treat an eye case that he did not quite understand than to frankly admit it to the patient and send him to the ophthalmologist; and, on the other hand, he would incur their everlasting condemnation if he persisted in treating a case that he did not understand, or that turned out badly, or sent to the specialist when it was too late.

To illustrate I will cite the following case:

Mrs. C., aged fifty-seven, was attacked suddenly with severe pain in and around the right eye, and in less than twenty-four hours she was blind. When I saw her twelve days later she was still suffering with severe pain in the eye. There was no perception of light, the pupil was dilated, the cornea was steamy in appearance and anæsthetic, the anterior chamber was shallow, the optic nerve deeply cupped, and the eyeball hard from increased intra-ocular tension. It was a typical case of acute glaucoma. The family had suggested that a specialist be summoned, but the attending physician said "it was not necessary until the inflammation subsided," and persisted in the use of atropine, which was the worst thing he could have used, thinking it a case of iritis. The patient was hopelessly blind, and nothing could be done for her at that late day but relieve her pain; while if the disease had been recognized at once and eserine used, or, that drug failing, an iridectomy or sclerotomy been performed, she would probably have saved her sight and been spared much unnecessary suffering. As it was, she suffered severely, lost the sight of her eye, and the physician lost the confidence of the family and was not employed by them afterward.

Familiarity with the use of the ophthalmoscope is an important acquisition to the general practitioner, as it will

enable him to recognize intra-ocular diseases—as cataract, chorioiditis, retinitis, glaucoma, and diseases of the optic nerve; but it is not absolutely necessary, as there are objective and subjective signs which will indicate the cases he should treat, and those he should refer to the ophthalmologist.

The extensive ground I am obliged to cover precludes the possibility of devoting more than a passing notice to any one subject in a paper of this kind, so I will call your attention only to the more important ones.

Injuries of the Eye.—In wounds of the lids involving the margin, always bring the edges into perfect apposition by a suture on the conjunctival side, in the margin and through the skin on the outside; otherwise an unsightly notch will remain. Wounds of the conjunctiva should be brought together with fine sutures, and, in case the sclera is lacerated, it is usually sufficient to suture the conjunctiva over it. Of course strict antisepsis should always be observed.

In penetrating wounds of the eye and where foreign bodies have entered the eyeball, the case should be referred to the ophthalmologist on account of their liability to cause cataract, loss of sight, and sympathetic ophthalmia.

I have seen many cases that were hopelessly blind in both eyes from an injury to one that, if they had had proper treatment and prompt removal of the injured eye at the outset, would be in the enjoyment of good sight in one eye. The following is a case in point:

Mr. G. C. W., seventy-seven years of age, while splitting kindling wood, a splinter struck the left eye, causing immediate loss of sight. The right eye became affected in a short time, and in four months he was blind in that eye. He was treated by his family physician. When I saw him nine months after the injury, both eyes were completely disorganized, and he was

still suffering with pain in the right eye. If this man had had the injured eye promptly enucleated at the time of the injury, or before sympathetic ophthalmia settled in the other one, he would to-day have one good eye, instead of which he is hopelessly blind.

In all penetrating wounds of the eye, particularly in or near the sclero-corneal junction, there is danger of sympathetic ophthalmia, and when this disease is once established the case is usually hopeless.

When called upon to treat an inflamed eye, always look for a foreign body either on the cornea or under the lids.

Not long ago a case came to me that had been treated off and on for six months for inflammation, in which the patient had a foreign body imbedded in the cornea that had been overlooked. I also saw a farmer within a few weeks who had a piece of a husk of grass seed on the cornea for several months, who had consulted a number of medical gentlemen and had used various washes, but was not relieved until it was removed. The cornea, conjunctiva of the eyeball and of the lids should be inspected through a convex lens of two and a half or three inches focus by a strong light, and by oblique illumination in every case of inflammation of the eye. By having the patient look down, the upper lid can be everted and the parts inspected, while by looking up, the lower *cul-de-sac* can be exposed to view.

Before removing foreign bodies from the cornea it is usually better to instill a few drops of a two- to four-per-cent. solution of cocaine to deaden its sensibility. If the foreign body is on the surface, it can usually be dislodged by a cotton-tipped probe, but if imbedded in the corneal tissue, a blunt needle or spud should be used, and great care should be observed not to allow the instrument to go through the cornea and cause cataract, as it is only one twenty-eighth of an inch in thickness in its center.

Diseases of the Conjunctiva.—In ordinary conjunctivitis there is swelling and redness of the conjunctiva, the superficial vessels are engorged, and there is more or less mucoid secretion that collects in the inner corners of the eyes. The eyeball is not tender, the reaction of the pupil is normal, and there is no dimness of vision except momentarily when a shred of mucus passes over the cornea. The redness is more marked in the lids and shades off toward the cornea. The treatment consists in the use of mild astringents, as boric acid two to four per cent., or alum one per cent., instilled into the eyes three or four times a day.

In children, and rarely in adults, we have a form of conjunctivitis which is characterized by the appearance of small pustules on the conjunctiva near the margin of the cornea; there may be one or several. The usual causes are gastro-intestinal disturbance, nasal catarrh, and scrofula, and they are treated by regulating the diet, having the patient eat only plain, easily digested food, avoiding all sweets, pastry, nuts, etc. A tablet of rhubarb and bicarbonate of sodium, each two grains and a half, after meals, is an excellent remedy to regulate the stomach and bowels. Locally have the eye bathed freely several times daily with a warm two-per cent. solution of boric acid, and either dust on the pustules daily a little finely powdered calomel—but be sure that the patient is not taking the iodide of potassium—or you may apply a small piece, twice as large as a pin head, of an ointment of the yellow oxide of mercury of the strength of one grain to one drachm of vaseline into the conjunctival sac and gently rub the lid over the eye.

It is the fashion among the laity and even by many physicians to call every eye that is red “pink eye,” which is equivalent to saying that it is not a serious thing and does not require any attention, and I have seen many cases where the sight was permanently injured by adhesion of

the iris to the anterior surface of the lens that had been pronounced "pink eye" by the family physician, and the patient had not sought the specialist until sight began to fail or the eye was painful. Pink eye is a popular term for an acute contagious mucopurulent conjunctivitis of horses, characterized by a pink appearance of the eyeball; but it should not be applied to the human race, as it does not mean anything, and serious diseases are often pronounced "pink eye" and treatment neglected until the eye is permanently impaired. I have a case now under my care that was treated for "pink eye" with strong astringents for a week by the family physician before I saw him, and his eye is nearly useless from posterior synechiæ and plastic exudation in the pupil.

Every case of eye disease should be thoroughly examined and a diagnosis made. If you are unable to make a diagnosis and there are serious symptoms, the case should be sent at once to an ophthalmologist. Another common error that many physicians make is to call a simple redness of the lids associated with a feeling of gravel in the eye granular lids, and to use harsh astringents, as a strong solution of sulphate of zinc, and the crayon of copper, when a mild astringent is all that is necessary, as the case is often a slight conjunctivitis, the result of an error of refraction.

In chronic granular conjunctivitis the palpebral surfaces of the lids are red, rough, and thickened from the presence of sago-like bodies in the conjunctiva. The eyeball may become secondarily affected, as by corneal ulceration and pannus. In the latter condition the upper half of the cornea becomes opaque and red from the development of blood-vessels in its substance. The treatment consists in using astringents, such as zinc sulphate two grains to an ounce, or cuprum sulphate one grain to an ounce,

two or three times a day, and applying to the palpebral surface of the lids the crayon of alum or copper or the glycerine of tannin ten grains to thirty grains to an ounce; and in some cases a two-per-cent. solution of nitrate of silver, applied to the lids and washed off with water after a few moments, to prevent its coming in contact with the cornea, is an excellent remedy. When pannus exists, atropine should always be used to prevent iritic complications. These cases are chronic and obstinate, and one is obliged to go through the whole list of remedies often before the case is cured. Latterly compression, squeezing out the contents of the granules with a specially made forceps, is practiced with success in some cases.

Diseases of the Lacrymal Canal.—These are usually caused by an extension of inflammation from the conjunctiva, or from the nose resulting in obstruction in the duct. Occasionally the puncta become occluded, when all that is necessary is to dilate them, and the tears will find their way into the nose. When there is obstruction in the duct, making a vertical nick in the punctum and passing probes of gradually increasing size once in four or five days will usually result in a cure. When the sac is inflamed it is necessary to syringe out the canal with an Anel's syringe containing a saturated solution of boric acid or other mild astringents. If the obstruction is in the nose, it must receive appropriate treatment.

Lacrymal abscess is of frequent occurrence in cases where obstruction and inflammation of the sac has previously existed. If called to a case where there are pain, tenderness, and swelling at the inner canthus, where obstruction previously existed, where the swelling is so great as to prevent slitting up the canaliculus into the sac, and pus exists, a free vertical incision should be made over the sac and hot antiseptic applications made until the swelling

goes down; then probes should be passed to overcome the obstruction or a fistula will result.

Ophthalmia Neonatorum.—The conjunctivitis of newborn children is one of the most serious diseases that you are called upon to treat, and one that causes more blindness than any other disease of the eye. This disease shows itself a few days after the birth of the child by more or less swelling of the lids and purulent or mucopurulent discharge. In some cases it is in a mild form, only requiring cleanliness and a mild astringent, as boric acid, to check it. In other cases it is so very severe that the lids swell enormously and the cornea sloughs within a few days from constriction, and interference with its nutrition. When called to see a case of this kind, do not be satisfied with trying to see the cornea, but with a pair of retractors separate the lids and get a good view of the cornea. Thorough antisepsis is absolutely necessary—cleansing the eyes with a solution of the bichloride of mercury (1 to 5,000) every hour at least, and applying astringents to the conjunctiva of the lids according to the severity of the case. If the cornea is not implicated, brushing the palpebral conjunctiva with a one-per-cent. nitrate-of-silver solution once a day and washing it off with water is usually as strong a remedy as is necessary. In addition, a one-per-cent. solution of alum may be dropped into the eye two or three times a day. If there is a corneal ulcer near the margin, use a one-eighth-of-one-per-cent. solution of eserine sulphate three times a day to prevent prolapse of the iris in case perforation of the cornea takes place. If the ulceration is near the center, use a one-fourth-of-one-per-cent. solution of atropine sulphate two or three times a day.

There are some cases where the discharge is very copious and the swelling so great that stronger solutions of

nitrate of silver are indicated, as from two to four per cent., but great care must be exercised not to allow it to come in contact with the cornea. The cornea should be inspected every day and complications met as they arise. I would also add that if antiseptic douches were freely used in every lying-in case before and during labor, and the child's eyes carefully cleansed with bichloride of mercury (1 to 5,000), we would see very few cases of purulent conjunctivitis in newly born children.

Diseases of the Cornea.—When the cornea is inflamed it loses its transparency. By oblique illumination and looking at the cornea from different angles there is usually no difficulty in seeing a corneal ulcer. The eye is more or less painful, and photophobia is usually a very marked symptom. The pupil reacts to light and shade. In children phlyctenular keratitis, which consists of one or more small ulcers on the cornea, is one of the most common diseases of the eye. Photophobia is very marked, the child often burying its face and avoiding the light until very late in the day. There is usually a papular eruption around the eyes and more or less rhinitis. Atropine and yellow oxide of mercury are usually the best local remedies for these cases. When photophobia is very marked a one half-of-one-per-cent. solution of hydrochloride of pilocarpine dropped into the eye three times a day gives great relief. The child should have good air, exercise, the diet should be plain and nourishing; internally quinine, iron, and arsenic, and in cold weather cod-liver oil, are the proper therapeutic measures. If rhinitis is prominent, Seiler's solution used in an atomizer produces good results.

In corneal ulcer with hypopyon, pus in the anterior chamber, atropine should be used if the ulcer is central and eserine when it is near the periphery of the cornea. A hot two-per-cent. solution of boric acid should be applied

freely every hour and a protective bandage. Pyoctanin, 1 part to 1,000, instilled into the eye three or four times a day clears up the pus in a marvelous manner in some cases. If the amount of pus is large, half filling the anterior chamber, paracentesis will have to be done, being careful not to wound the lens with the instrument, or cataract will result. In the interstitial form of keratitis atropine should always be used, as the iris sooner or later becomes inflamed and adhesions form. Potassium iodide or some of the salts of mercury should be used, as the cause is always due to congenital syphilis, and is associated with a peculiar conformation of the teeth, first described by Hutchinson. The cornea is usually of a uniform ground glasslike opacity; occasionally it becomes red from the development of blood-vessels in its structure. After the inflammatory stage is passed, yellow-oxide of-mercury ointment assists wonderfully in clearing up the opacity.

Diseases of the Iris.—The most important disease of the iris is iritis. The more common causes are syphilis and rheumatism. It is a very serious disease, and the sight of a great many eyes are impaired and often lost because of a neglected iritis, or one that has not been recognized early and treated properly. The symptoms are pain in the eye and brow, tenderness of the eyeball, photophobia, lacrymation, and dimness of vision. There is a ring of redness around the cornea which shades off toward the lids. The redness is caused by the engorgements of the deeper vessels, while in conjunctivitis the superficial vessels are congested. The aqueous humor is cloudy, the pupil small, sluggish, or immovable, and if a mydriatic is used it dilates irregularly, as portions of the margin of the pupil have become adherent to the anterior capsule of the lens. If only one eye is attacked there will be a well-marked difference in the color of the iris; it will have lost

its luster and will appear darker than its fellow. Atropine is the sheet anchor in this disease, and it should be used early to prevent adhesion of the iris to the anterior surface of the lens, and a half to a one-per cent. solution should be instilled into the eye often enough to keep the pupil thoroughly dilated during the whole course of the disease.

A precaution that should always be observed in the use of atropine in patients over forty years of age is to watch the tension of the eyeball for fear that glaucoma may be brought on by its use. Employ it often enough and long enough only to keep the pupil dilated while the inflammation of the iris lasts. Hot applications are very grateful to the eye and may be used *ad libitum*. In the rheumatic form of the disease full doses of salicylate of sodium often relieve the pain in twenty-four hours, and it should be continued as long as necessary.

When syphilis is the cause the salts of mercury are indicated, and the sooner the patient is brought under the influence of the drug the quicker will the disease be overcome. I have seen a great many cases of iritis that have been treated for conjunctivitis and where strong astringents were used until the eye was permanently damaged by the formation of adhesions; but if the distinguishing characteristics of each disease are borne in mind the mistake ought never to occur.

Glaucoma.—This is a disease that if not recognized early will cause blindness in acute cases in a few hours sometimes. The symptoms are pain in and around the eye, coming on suddenly, often accompanied by nausea. Sight becomes impaired and increases to total blindness. Preceding the attack there may be periodical blurring of sight, diminution in the range of accommodation, and tendencies to see rainbows around the light. The appearance of the eye is very characteristic, the cornea is steamy, the

pupil is large and does not react to light, the anterior chamber is shallow, there is circumcorneal venous injection and fullness of the anterior scleral veins, and a dull purplish discoloration around the margin of the cornea. All these conditions are caused by an increase in the intra-ocular fluids, rendering the eyeball harder than normal. This can be easily determined by having the patient look down, and with the tip of the middle finger of each hand on the eyeball press gently, first with one finger, then with the other, and any variation from the normal resistance can be perceived. If one eye is healthy the tension of the diseased eye can be compared with it; if not, you can compare it with your own. After a little experience it is an easy matter to discover an increase or decrease in the intra-ocular tension. With the ophthalmoscope, excavation of the optic nerve will be seen, the central artery of the retina may be pulsating, and the retinal veins are enlarged and tortuous. The treatment is half a grain of eserine sulphate, five grains of cocaine hydrochlorate, to an ounce of water, to be instilled into the eye every hour or two until the eyeball becomes softer, pain is relieved, and vision improved. If there is no improvement in twenty-four hours, iridectomy or sclerotomy should be performed without delay. This disease, as well as iritis, is often mistaken for neuralgia by the general practitioner, and in too many cases the patient is hopelessly blind before he discovers his error.

It should be borne in mind that neuralgia is not accompanied by any disturbance of vision or inflammation of the eye, while in glaucoma and iritis there are marked characteristic symptoms peculiar to each disease. Each causes pain in and around the eye, but in iritis it is more in the brow, while in glaucoma the pain may be more severe around the eye. The pupil in glaucoma is large, while in iritis it is small. In iritis the eyeball is tender

and the tension is usually normal, while there is not usually tenderness of the eyeball in glaucoma, but the tension is increased. In iritis the sight becomes blurred after a few days, while in acute glaucoma vision may be lost in twenty-four hours. When called to a patient beyond middle age, who has been taken suddenly in the night with severe pain in and around the eye, with nausea and disturbance of vision, if the pupil is dilated and immovable, the tension of the eyeball increased, you may be sure that it is glaucoma and nothing else. I lay particular stress on the diagnosis of iritis and glaucoma, because I have seen many cases in which the patients have either lost their sight or it was permanently impaired, because the condition was not recognized.

Errors of Refraction.—In these days of progress and enlightenment we should not expect that patients would be dosed with all the remedies in the materia medica for headaches when the proper adjustment of glasses is often all that is necessary to relieve them in the majority of cases; but I am constantly seeing patients that have taken every kind of a headache remedy without relief, who are made comfortable by having their refractive error corrected. It is the exception to find an optically correct eye, and under the pressure of our school system, and in the struggle for life, it is often necessary to correct even the smallest muscular and refractive errors that the patient may continue his or her work comfortably.

I have had four cases of epilepsy in young people whose fits have been stopped by correcting their refractive errors, and they have been under observation for several years. In one case there was a return of the fits during a short period when her glasses were broken. I could cite hundreds of cases from my record book, if the limit of this paper did not forbid it, that would show the part that refractive

errors play in the causation of headaches and other reflex disturbances, as nausea, vertigo, etc. As to the correction of refractive errors, it should be done only by the ophthalmologist, and in young people only after a mydriatic has been used, and not as it is often done by ignorant opticians and itinerant peddlers of spectacles.

It is a very common occurrence to find people wearing concave glasses that have been fitted by an optician when the patient requires a convex glass, and many eyes are permanently weakened by improperly fitted glasses. Within a few months I have seen at least half a dozen women who were fitted with near-sighted glasses by a traveling quack, who made a specialty of everything and was highly recommended by a certain clergyman in my city, where the patients were either far-sighted or had far-sighted astigmatism. This same quack operated for convergent strabismus on the child of another clergyman, and now the child has a deviation of 30° outward and sinking of the caruncle which will disfigure her for life.

If a patient complains of headaches, poor sight, and pain in the eyes, the probability of a refractive error being the cause is now generally recognized; but if the sight is normal and there is little or no discomfort in using the eyes for near work, and if the headaches are not frontal, an ocular defect as a possible cause does not usually receive much consideration. It is, however, a fact that a large number of patients who have good sight for distance and near, and are able to read and sew for hours without discomfort, suffer from neuralgic headaches that can be and are relieved by the correction of some refractive or muscular defect. The following case will illustrate the latter class of patients:

Miss D., twenty years of age, teacher, has always enjoyed good health with the exception that she has headaches since

she can remember; says "her eyes do not trouble her, and that she sees perfectly well and does not want to wear glasses, but that her physician had given her everything he could think of for her headaches without affording her any relief, and had sent her to have her eyes examined." I found that she had compound hypermetropic astigmatism and corrected it after using a mydriatic, and she wears her glasses constantly and has had no more headaches.

In conclusion, I would advise in every case of chorea, epilepsy, and headaches, to have the eyes examined for muscular and refractive defects, and I am satisfied that a large percentage of the patients would find relief.

